

REMARKS

Claim objections and §112 rejections.

The Examiner objected to claim 22 under 37 C.F.R. §1.75(c) as being of improper dependent form. Further, the Examiner rejected claim 23 under 35 U.S.C. §112, 2<sup>nd</sup> paragraph as being indefinite. Applicants amended claims 22 and 23 to address the claim objection and rejection. In particular, the amendments change the dependencies of claims 22 and 23. Applicants respectfully request reconsideration.

§102 Rejections.

The Examiner also rejected claims 1-4, 6-7, 9-10, 16-17, 19-22, 24, 26, and 27 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,390,244 to Hinman et al., herein referred to as Hinman. Applicants respectfully disagree and offer the following arguments rebutting the rejection.

Claim 1 of the pending application claims a method for detecting ringback in a received signal. The claimed method includes the following limitations (emphasis added):

- a. calculating the energy of said received signal;
- b. calculating a threshold based on said energy in said received signal;
- c. determining whether ringback is present in said received signal by comparing said energy in said received signal to said threshold; and
- d. outputting a control signal indicating whether ringback is present in said received signal.

Regarding element (a), the Examiner asserts that Hinman discloses calculating correlation coefficients  $R(0) - R(10)$  using an energy formula, and therefore, anticipates element (a). However, contrary to the Examiner's assertions, none of the correlation coefficients calculated in Hinman correspond to the energy of the received signal. Whatever  $R(0)$  is, Applicants note that a Hamming window is applied to the received samples before  $R(0)$  is calculated (see Figure 3(a) and column 4, lines 34-50). Thus,  $R(0)$  is only non-linearly related to the energy of the received signal, and therefore, cannot be interpreted as the energy of the received signal. Further,  $R(1) - R(10)$  are autocorrelation values that clearly do not represent energies to those skilled in the art because each of equations 2 – 11 involves multiplying each sample with a different sample. Contrastingly, as known by those skilled in the art, energy calculations involve multiplying each sample with itself. As such, contrary to the Examiner's assertions, none of the auto-correlation values  $R(0) - R(10)$  represent the energy of the received signal. Therefore, Hinman does not anticipate at least element (a) of claim 1.

Regarding element (b), the Examiner contends that "calculating a threshold based on said energy in said received signal" is anticipated by Hinman because Hinman discloses an experimentally derived threshold that is varied based in response to the ERLE. First, the experimentally derived threshold of Hinman is pre-calculated (see column 5, line 59). As such, Hinman's threshold cannot be based on a received anything, much less the received signal, as claimed in element (b) of claim 1. Second, the ERLE of Hinman is not based on the received signal. Instead, the ERLE is based on a microphone signal. As discussed in column 6, lines 2-27, the ERLE is "calculated using two blocks of 160 samples, each collected within the speakerphone controller 12

... One of two blocks of collected data is sampled at data point 37 in speakerphone controller 12, and the second block of data is collected at data point 38.” As shown in Figure 2, samples collected at data points 37 and 38 correspond to the signal from microphone 40. As such, the samples used to calculate the ERLE in Hinman are samples from the microphone input. Therefore, at best, Hinman’s threshold is based on the microphone input samples, and not on the received signal, as claimed in claim 1. For at least these reasons, the threshold of Hinman cannot be based on the energy of the received signal. Therefore, Hinman cannot anticipate at least element (b).

Regarding element (c), the Examiner asserts that Hinman discloses detecting ringback in the received signal under the scrutiny of the threshold, and therefore, anticipates element (c) of claim 1. However, element (c) claims “comparing said energy in said received signal to said threshold” (emphasis added). As shown in column 5, lines 58-60, Hinman compares a “computed sum” to an experimentally derived threshold. This computed sum is the sum of the absolute value of the normalized coefficients  $R(1) - R(10)$ . As discussed above, coefficients  $R(1) - R(10)$  do not represent the energy of the received signal. Further, nothing in Hinman calculates or otherwise uses the energy of the received signal. As such, contrary to the Examiner’s assertions, Hinman does not compare the energy of the received signal to any threshold, much less a threshold calculated based on the energy in the received signal. Therefore, Hinman cannot anticipate at least element (c) of claim 1.

Clearly, as discussed above, Hinman does not anticipate at least elements (a) – (c) of claim 1, and therefore, claim 1 is patentably distinct from the cited art. Because independent claim 1 is patentably distinct, dependent claims 2-15 are also patentably

distinct from the cited art. Applicants respectfully request reconsideration and allowance of claims 1-15.

Independent claims 16, 19, and 24, recite substantially similar features<sup>1</sup> to the patentably distinct features discussed above with respect to claim 1. Therefore, claims 16, 19, and 24 are also patentably distinct over the cited art. Because independent claims 16, 19, and 24 are patentably distinct, dependent claims 17-18, 20-23, and 25-31, respectively, are also patentably distinct. Applicants respectfully request reconsideration and allowance of claims 16-31.

#### §103 Rejections.

The Examiner also rejected dependent claims 5, 8, 11-15, 18, 23, 25, and 28-31 under 35 U.S.C. §103(a) as unpatentable over Hinman in view of various other cited references. However, Hinman fails to teach or suggest several limitations of the claims, and the other cited references fail to cure the defects of Hinman. Accordingly, the combination of Hinman with the other references, assuming *arguendo* that the combinations are proper, necessarily fails to teach each and every limitation of the claims. Therefore, the §103 rejections must fail

Because of the arguments presented above, Applicants submit that claims 1-31 stand in condition for allowance. Therefore, Applicants respectfully request the

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<sup>1</sup> Claim 16 calculates "the energy of the received signal," calculates a ringback "threshold based on said calculated energy of said received signal," and compares the "calculated energy of said received signal to said ringback threshold."

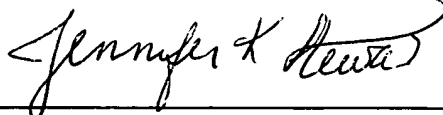
Claim 19 compares characteristic measurements of a received signal to a variable threshold, wherein the threshold is "based on said measurements of said received signal."

Claim 24 includes a ringback detector that calculates "the energy of the received signal," calculates a ringback "threshold based on said calculated energy of said received signal," and compares the "calculated energy of said received signal to said ringback threshold."

Examiner reconsider the rejections, and permit the application to move forward in allowance. If any issues remain unresolved, Applicants request that the Examiner call the undersigned so that any such issues may be expeditiously resolved.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.



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Jennifer K. Stewart  
Registration No.: 53,639

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P.O. Box 5  
Raleigh, NC 27602  
Telephone: (919) 854-1844